Perirectal pyogranulomatous inflammation causing rectal obstruction and colic in a Norwegian Fjord gelding

Perirectale pyogranulomateuze ontsteking als oorzaak van een rectale obstructie en koliek bij een Noorse Fjordruin

[1]L. M. Hunt, [2]S. Van Poucke

[1]University of Minnesota, College of Veterinary Medicine,

1333 Gortner Avenue, St. Paul, MN 55108, USA

[2]The Veterinary Practice, Millennium Way, Braintree, CM7 3GX, Essex, UK

ABSTRACT

An 18-month-old Fjord gelding was examined for colic and clinical signs of tenesmus and dyschezia. Rectal examination and transrectal ultrasonography showed a firm tissue mass on the dorsolateral aspect of the left rectal wall. Histopathology of multiple perirectal tru-cut biopsies revealed a pyogranulomatous inflammation. Cultures for microorganisms were negative. A diagnosis of extra-luminal rectal pyogranulomatous inflammation was made. Conservative treatment resulted in complete remission.

SAMENVATTING

Een Fjordruin van 18 maanden oud werd onderzocht voor koliek en klinische symptomen van tenesmus en dyschezie. Bij het rectaal onderzoek en de transrectale echografie werd een harde massa in het dorso-lateraal aspect van de linkerwand van het rectum gevonden. De histopathologische bevindingen van verschillende perirectale biopsieën wezen op een pyogranulomateuze ontsteking. De ruin herstelde volledig na een conservatieve behandeling.

INTRODUCTION

Extra-luminal obstruction of the rectum is uncommon in horses. Only a few cases have been reported in the literature (Sanders-Shamis, 1985; Ayres and Wagner, 1994; Magee *et al.* 1997; Torkelson, 2002), and most of these have been in young horses. Extraluminal obstruction of the rectum in horses can be caused by perirectal abscesses, anorectal lymphadenopathy, hematoma formation, perirectal strictures and neoplasia (Sanders-Shamis, 1985; Ayres and Wagner, 1994; Magee *et al.* 1997).

Abscessation can occur secondary to a rectal puncture or tear, to rectal inflammation or to lymphadenopathy, and it can also occur as a sequel to dystocia (Sanders-Shamis, 1985; Ayres and Wagner, 1994). Clinical findings include abdominal pain, tenesmus, dyschezia, lack of fecal production, fever and, less frequently, dysuria (Sanders-Shamis, 1985; Ayres and Wagner, 1994; Magee *et al.* 1997; Torkelson, 2002). Most of the reported cases of perirectal abscessation are dorsal to the rectal wall (Magee *et al.*, 1997), although ventral and lateral locations have also been reported (Sanders-Shamis, 1985; Magee *et al.*, 1997). Organisms previously isolated from perirectal abscesses in young growing horses include *Streptoccoccus zooepidemicus* and *Escherichia coli* (Sanders-Shamis, 1985; Magee *et al.*, 1997).

This paper describes an extra-luminal rectal obstruction and colic due to perirectal pyogranulomatous inflammation in a Fjord pony.

CASE HISTORY

An 18-month-old Fjord gelding was presented for colic of four hours duration. An elevated heart rate and impacted rectal feces were noted by the referring veterinarian. Excessive straining and the hard fecal consistency prevented a thorough rectal examination from being performed. Passage of a nasogastric tube did not yield any net reflux. Mineral oil, electrolyte water, phenylbutazone (1g) and flunixin meglumine (350mg) had been administered prior to referral.

On presentation, the gelding was quiet but responsive. Mild abdominal distension, tenesmus and urine dribbling were evident. Clinical examination revealed a pulse of 60 beats per minute, a respiratory rate of 28 breaths per minute and a rectal temperature of 37.20C. The mucous membranes were pink, with a capillary refill time of < 2 seconds. The gut sounds were depressed but audible in all four abdominal quadrants. No reflux was obtained on passage of a nasogastric tube.

Rectal examination revealed dry, firm feces in the rectum. Rectal evacuation with a soapy enema was performed following administration of caudal epidural anesthesia. A firm tissue mass was palpable approximately eight centimeters cranial to the anus on the left dorso-lateral wall of the rectum and extending cranially. The mass resulted in narrowing of the rectal lumen to approximately two centimeters diameter. Firm feces were palpable immediately cranial to the mass. No other abnormalities were evident on rectal palpation.
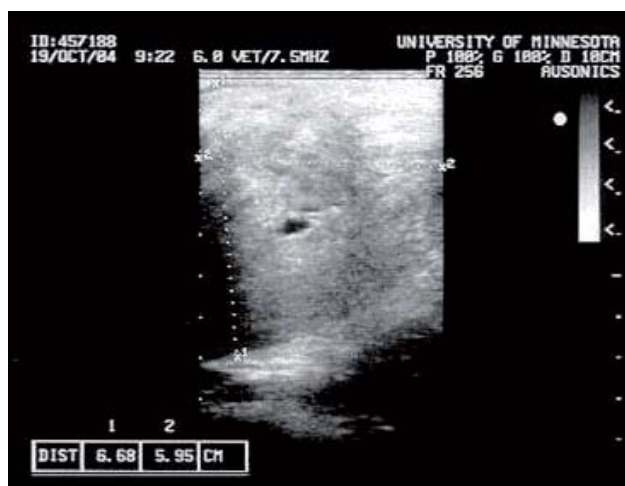
Figure 1. Transrectal ultrasound shows 6-7 cm mass on the dorsolateral aspect of the left rectal wall. Several areas of fluid are visible within the soft tissue density.

A complete blood count (CBC) revealed a leukocytosis (15.4x103/ul, normal range: 4.6-11.6), with a mature neutrophilia (8.78x103/ul, normal range: 1.5-8.5). Fibrinogen was elevated at 0.5g/dL (normal range: 0.1-0.4). A chemistry profile showed a hyperproteinemia (7.5g/dL, normal range: 5.2-7.1) with a relative hyperglobulinemia (4.3g/dL, normal range: 2.6-4). Other parameters were within normal limits.

Abdominal ultrasound was performed on admission. Normal small intestines were visible in the left mid-flank region. Motility and wall thickness were both normal. Abdominocentesis yielded a clear, yellow colored fluid. The total protein level and cytological analysis were both normal. Transrectal ultrasound revealed a 6-7 cm soft tissue, mixed echogenic mass on the dorsolateral aspect of the left rectal wall. Several areas of fluid were visible within the soft tissue density (Figure 1). Cytology of a perianal fine needle aspirate was non-diagnostic. Histopathology of multiple perirectal tru-cut biopsies revealed a predominance of macrophages and neutrophils with granulation tissue. These findings were consistent with pyogranulomatous inflammation and granulation tissue. Aerobic and anaerobic cultures were negative. A presumptive diagnosis of a perirectal pyogranuloma was made.

Intravenous fluids (LRS - lactated ringers, Baxter) were administered over the initial 24 hours. Warm soapy enemas were administered on two further occasions during the initial 36 hours of hospitalization to aid passage of feces. Two liters of mineral oil were administered daily by nasogastric tube for the first 48 hours. Intravenous ceftiofur sodium (Naxcel, Upjohn Ltd) at 2mg/kg IV twice daily and flunixin meglumine (Banamine, Schering Plough Ltd.) at 1.1mg/kg IV twice daily were administered for 5 days.

Fecal production normalized within 36 hours of admission. Chopped hay and alfalfa cubes soaked in water were subsequently fed in gradually increasing amounts. Frequent hand walking and limited grazing were also allowed. No further signs of abdominal discomfort, tenesmus, dyschezia or abdominal distension were observed.

Rectal palpation and ultrasound examination on day 5 revealed a reduction in the size of the mass (now measuring ~ 3.0 x 1.0 cm). The pony was discharged from the hospital and treatment was continued with oral trimethoprim sulfamethoxazole at 24mg/kg twice daily PO for 14 days. Recommendations to continue feeding a high moisture diet were also made.

Rectal palpation and ultrasound examination performed two weeks later revealed a 2cm hyperechoic region in the area of the previous mass. This was most consistent with scar tissue formation. There was no fluid visible. A repeat CBC including fibrinogen was normal. The normal diet was slowly re-introduced, along with the normal turnout/grazing period.

After four weeks, the pony was healthy and no abnormalities were detected on rectal palpation by the referring veterinarian.

One year later the pony remains in good condition and no further episodes of tenesmus, dyschezia or colic have been seen.

DISCUSSION

The clinical findings in this report were consistent with previous reports of perirectal abscesses or anorectal lymphadenopathy in horses (Sanders-Shamis, 1985; Ayres and Wagner, 1994; Magee *et al.* 1997; Torkelson, 2002). Common signs of extraluminal obstruction of the rectum include abdominal pain, tenesmus, dyschezia, lack of fecal production, fever and, less frequently, dysuria. Urine retention is a complication seen in humans with perirectal abscesses (Marcus *et al.*, 1995). The dysuria seen in this case could have been caused by direct pressure on the underlying urethra or may have been the result of neuritis secondary to regional inflammation resulting from the extraluminal obstruction (Magee *et al.*, 1997).

Anorectal lymphadenopathy has been reported to cause colic and result in perirectal abscess formation in young horses (Magee *et al.*, 1997). It is possible that the swelling in this pony could have originated from the anorectal lymph nodes. Ten to thirty lymph nodes are positioned dorsally along the rectum in the retroperitoneal space and receive drainage from the rectum, anus, uterus, vagina, vulva, clitoris and tail (Saar and Getty, 1975). It is possible that anorectal lymphadenopathy in young horses is a consequence of their naïve immune system, which makes them more susceptible to common pyogenic organisms, which in turn can cause abscesses to form in lymph nodes via local or hematogenous spread (Magee *et al.*, 1997). Lymph nodes are colonized by bacteria brought in by leukocytes, and these bacteria cause causing inflammation, hyperplasia and abscess formation (Carter *et al.*, 1995).

Abscesses in this area may also develop secondary to intramuscular injections in the gluteal muscles, with the formation and gravitation of exudates along a route of least resistance to the perirectal area (Sanders-Shamis, 1985; Ayres and Wagner, 1994; Marcus *et al.*, 1995).

Improper healing of rectal tears can possibly lead to abscess or fistula formation, particularly with grade III rectal tears (Freeman, 1999). There are reports of spontaneous/idiopathic rectal tears in the literature,

and most of these tend to be transversely orientated (Slone *et al.*, 1982). In comparison, iatrogenic rectal tears tend to involve the dorsal aspect of the rectum and are located 15-55cm from the anus, parallel to the long axis (Magee *et al.*, 1997). Hematoma formation is most likely to occur as a result of trauma such as homosexual activity, dystocias, pelvic fractures and possibly rectal palpation.

There was no history of trauma or intramuscular injections, no recent rectal examination had been performed, and the pony was housed with a filly pasture mate.

Diagnosis of rectal obstruction should include rectal palpation and ultrasonographic examination. Percutaneous or per rectum aspiration/biopsy of the mass are most likely to provide a definitive diagnosis. Serial rectal and ultrasound examinations also aid in monitoring response to treatment. If the size of the animal prevents rectal palpation, proctoscopy can be used and radiographs can aid in confirming the position and extent of the mass (Ayres and Wagner, 1994).

As in this pony, conservative management is indicated in the majority of cases: the removal of impacted feces and the administration of antibiotics, of laxatives to soften feces, and of anti-inflammatory drugs to relieve pain and inflammation are all important. In some cases surgical drainage of the mass is necessary (Sanders-Shamis, 1985; Magee *et al.*, 1997). Indications for surgical intervention include: failure of medical management, spread of the abscess into the peritoneal cavity, signs of pain that cannot be controlled by relieving constipation, detection of a mature abscess ultrasonographically, and secondary complications that necessitate abdominal exploration. Surgery was required in one foal due to its inability to urinate (Marcus *et al.*, 1995).

Dorsally located abscesses are drained into the rectum. Those located ventrally are drained by an ipsilateral incision exterior to the anal sphincter or ventral into the vagina in mares and ventral to the anus in males. The abscess cavity should then be flushed with a 10% povidone-iodine solution for several days (Sanders-Shamis, 1985). Horses with peritonitis require an exploratory celiotomy. The prognosis for horses with an uncomplicated abscess is good.

In some reported cases, surgical treatment under anesthesia was elected due to the close proximity to the internal iliac arteries. In such cases, the abscess was partially dissected and removed, and a marsupialization procedure was performed to allow drainage into the rectum (Ayres and Wagner, 1994).

No underlying cause of the acute pyogranulomatous inflammation in this pony was identified. Pyogranulomatous inflammation would be suggestive for a penetrating foreign body (e.g. plant material) or bacteria or fungal granulomata. However, culture and special stains for granuloma forming organisms were negative.

ACKNOWLEDGEMENT

REFERENCES

Ayres S.L., Wagner P. (1994). Perirectal abscess in an American Minature Horse. *Equine Practice 16(9)*, 33-35.

Carter G.R., Chengappa M.M., Roberts A.W. (1995). Bacteria. In: *Essentials of Veterinary Microbiology*. 5th ed., Lea & Febiger, Philadelphia, pp.110-111.

Freeman D.E (1999). In: Auer, J.A., Stick, J.A. (eds.). *Equine Surgery*. 2nd ed., W.B. Saunders, Philadelphia, pp. 286-293.

Magee A.A., Ragle C.A., Hines M.T., Madigan J.E., Booth L.C. (1997). Anorectal lymphadenopathy causing colic, perirectal abscesses, or both in five young horses. *Journal of the American Veterinary Medical Association 210*, 804-807.

Marcus R.H., Stine R.J., Cohen M.A. (1995). Perirectal abscess. *Annals of Emergency Medicine 25*, 597-603.

Saar L.I., Getty R. (1975). Equine lymphatic system. In: *The Anatomy of Domestic Animals*. 5th ed., W.B. Saunders, Philadelphia, pp. 625-629.

Sanders-Shamis M. (1985). Perirectal abscesses in six horses. *Journal of the American Veterinary Medical Association 187*, 499-500.

Slone D.E., Humburg J.M., Jagar J.E., Powers, R.D. (1982). Noniatrogenic rectal tears in three horses. *Journal of the American Veterinary Medical Association 180*, 750.

Torkelson J. (2002). Perirectal abscess, colic and dyschezia in a horse. *Canadian Veterinary Journal 43*, 127-128.